

CLAIM AMENDMENTS:

Please cancel Claims 41 and 42 without prejudice.

1. (Currently Amended) ~~[[A]]~~ An isolated DNA sequence molecule encoding a cyclin-dependent kinase inhibitor or encoding an immunologically active and/or functional fragment of such a protein, selected from the group consisting of:

(a) a DNA sequences molecule comprising a nucleotide sequence encoding a protein comprising the amino acid sequence as ~~given~~ set forth in SEQ ID NO: ~~[[2,]]~~ 4 or 6;

(b) a DNA sequences molecule comprising a nucleotide sequence as ~~given~~ set forth in SEQ ID NO: ~~[[1,]]~~ 3 or 5;

(c) a DNA sequences molecule comprising the nucleotide sequence encoding a protein comprising the amino acid sequence from amino acid position ~~75 to 209 of SEQ ID NO: 2 or from amino acid position 11 to 216 of SEQ ID NO: 4 or comprising the nucleotide sequence from nucleotide position 305 to 932 of SEQ ID NO: 1;~~

(d) a DNA sequences molecule hybridizing with the complementary strand of a DNA sequence as defined in any one of (a) to (c);

(e) a DNA sequences molecule encoding an amino acid sequence ~~which is~~ having at least 30% ~~identical~~ similarity to the amino acid sequence encoded by the DNA ~~sequence~~ molecule of any one of (a) to (c) or a DNA molecule encoding an amino acid sequence having at least 30% similarity to the amino acid sequence set forth in SEQ ID NO:2, or having at least 30% similarity to the amino sequence from amino acid position 75 to 209 of SEQ ID NO:2, and excluding a DNA molecule encoding ICK1 having the amino acid sequence as set forth in SEQ ID NO:6;

(f) a DNA sequences molecule, the nucleotide sequence of which is degenerated as a

result of the genetic code to a ~~nucleotide sequence of~~ DNA molecule having a DNA sequence as defined in any one of (a) to (e); and

(g) a DNA ~~sequences~~ molecule encoding a fragment of a protein encoded by a DNA ~~sequence~~ molecule of any one of (a) to (f).

2. (Original) A method for identifying and obtaining a cyclin-dependent kinase inhibitor comprising a two-hybrid screening assay wherein CDC2a as a bait and a cDNA library of a cell suspension as prey are used.

3. (Original) The method of claim 2, wherein said CDC 2a is CDC2aAt.

4. (Currently Amended) A DNA ~~sequence~~ molecule encoding a cyclin-dependent kinase inhibitor obtainable by the method of claim 2 ~~or 3~~ and which has an amino acid sequence having at least 30% ~~identical~~ similarity to the amino acid sequence encoded by the DNA sequence of claim 1(a) or claim 1(b) or 30% similarity to the amino acid sequence as set forth in SEQ ID NO:2.

5. (Currently Amended) A nucleic acid molecule of at least 15 nucleotides in length hybridizing specifically with a DNA ~~sequence~~ molecule of claim 1 or 4 or hybridizing to a DNA molecule encoding a protein comprising the amino acid sequence as set forth in SEQ ID NO:2, or a DNA molecule encoding the amino acid sequence from position 75 to 209 of SEQ ID NO:2, or a DNA molecule comprising a nucleotide sequence as set forth in SEQ ID NO:1, or a DNA

molecule comprising a nucleotide sequence from nucleotide position 305 to 932 of SEQ ID NO:1, or with a complementary strand thereof.

6. (Currently Amended) A vector comprising a DNA ~~sequence~~ molecule of claim 1 or 4.

7. (Currently Amended) The vector of claim 6 which is an expression vector wherein the DNA ~~sequence~~ molecule is operatively linked to one or more control sequences allowing the expression in prokaryotic and/or eukaryotic host cells.

8. (Currently Amended) A host cell ~~containing~~ comprising a ~~the~~ vector of claim 6 ~~or 7~~ or a DNA sequence molecule of claim 1 or 4.

9. The host cell of claim 8 which is a bacterial, insect, fungal, plant or animal cell.

10. (Currently Amended) A method for the production of a cyclin-dependent kinase inhibitor or an immunologically active and/or functional fragment thereof, which comprises ~~comprising~~ culturing a host cell of claim 8 ~~or 9~~, or culturing a host cell comprising a DNA molecule or vector comprising a DNA molecule, wherein the DNA molecule encodes an amino acid sequence having the amino acid sequence as set forth in SEQ ID NO:2, or wherein the DNA molecule comprises the sequence set forth in SEQ ID NO:1, under conditions allowing the expression of the protein and recovering the produced protein from the culture.

11. (Currently Amended) A cyclin-dependent kinase inhibitor or an immunologically active and/or functional fragment thereof ~~encodable~~ encoded by a the DNA sequence molecule of claim 1 or 4, or a DNA molecule comprising a nucleotide sequence as set forth in SEQ ID NO:1, or a DNA molecule comprising the nucleotide sequence from nucleotide position 305 to 932 of SEQ ID NO:1, or a DNA molecule encoding a protein comprising the amino acid sequence as set forth in SEQ ID NO:2, or a DNA molecule encoding the amino acid sequence from amino acid position 75 to 209 of SEQ ID NO:2 ~~or obtainable by the method of claim 2, 3 or 10.~~

12. (Original) An antibody specifically recognizing the cyclin-dependent kinase inhibitor of claim 11 or a fragment or epitope thereof.

13. (Currently Amended) A method for the production of transgenic plants, plant cells or plant tissue comprising the introduction of a DNA ~~sequence~~ molecule of claim 1 ~~[[,]] or 4 or 5~~ ~~or a vector of claim 6 or 7~~ into the genome of said plant, plant cell or plant tissue.

14. (Original) The method of claim 13 further comprising regenerating a plant from said plant tissue or plant cell.

15. (Currently Amended) A transgenic plant cell comprising a DNA ~~sequence~~ molecule of claim 1 or 4 which is operably linked to regulatory elements allowing transcription and/or expression of the DNA ~~sequence~~ molecule in plant cells ~~or obtainable according to the method of~~

~~claim 13 or 14.~~

16. (Currently Amended) The transgenic plant cell of claim 15 wherein said DNA ~~sequence~~ molecule or said vector is stably integrated into the genome of the plant cell.

17. (Original) A transgenic plant or a plant tissue comprising plant cells of claim 15 ~~or~~ 16.

18. (Original) The transgenic plant of claim 17 in which plant cell division and/or growth is altered.

19. (Currently Amended) A transgenic plant cell which contains stably integrated into the genome a DNA ~~sequence~~ molecule of claim 1 ~~[[,]] 4 or 5~~ or part thereof ~~or obtainable according to the method of claim 13 or 14~~, wherein the transcription and/or expression of the DNA ~~sequence~~ molecule or part thereof leads to reduction of the synthesis of the cyclin-dependent kinase inhibitor of claim ~~11~~ 1 in the cells.

20. (Currently Amended) The plant cell of claim 19 or a transgenic plant cell which contains stably integrated into its genome a DNA molecule comprising a nucleotide sequence encoding a protein comprising the amino acid sequence as set forth in SEQ ID NO:2, or a DNA molecule comprising a nucleotide sequence as set forth in SEQ ID NO:1, or a DNA molecule comprising a the nucleotide sequence from nucleotide position 305 to 932 of SEQ ID NO:1, or a DNA molecule comprising the nucleotide sequence encoding a protein comprising the amino

acid sequence from amino acid position 75 to 209 of SEQ ID NO:2, wherein the reduction is achieved by an antisense, sense, ribozyme, co-suppression and/or dominant mutant effect.

21. (Original) A transgenic plant or plant tissue comprising the plant cells of claim 19 ~~or~~ 20.

22. (Original) The transgenic plant of claim 21 which displays a deficiency in plant cell division and/or growth.

23. (Original) Harvestable parts or propagation material of a plant ~~plants of any one of claims claim 17[[,]] 18, 21 or 22 comprising plant cells of claim 15, 16, 19 or 20.~~

24. (Currently Amended) ~~A~~ An isolated DNA molecule comprising the regulatory sequence of a promoter regulating the expression of a nucleic acid molecule of claim 1 or 4, or comprising the regulatory sequence of a promoter regulating the expression of the nucleic acid molecule having the sequence as set forth in SEQ ID NO:1, or of a nucleic acid molecule homologous to said nucleic acid DNA molecule.

25. (Original) The regulatory sequence of claim 24 wherein said regulatory sequence is capable of conferring expression of a heterologous DNA sequence in

(a) young root meristems, pericycle cells in the vascular tissue, shoot apical meristem, surface and tip of young leaves, the epidermis of the stem of young seedlings, tapetal

layer of the anthers in pollen grains, flower buds and mature ovaries, embryos at the globular, heart and torpedo stages, embryonic root;

(b) root and shoot apical meristems, young differentiating leaves, flower buds and young flowers, ovary wall, funiculus, ovules and pollen grains, embryo at the globular stage, embryonic root; or

(c) main and lateral root meristems and shoot apical meristems, vascular tissue, pericycle, mature ovaries, globular and heart embryonic root.

26. (Currently Amended) A recombinant DNA molecule comprising the regulatory sequence of claim 24 ~~or 25~~.

27. (Original) The recombinant DNA molecule of claim 26, wherein said regulatory sequence is operatively linked to a heterologous DNA sequence.

28. (Original) The recombinant DNA molecule of claim 27, wherein said heterologous DNA sequence encodes a peptide, protein, antisense RNA, sense RNA and/or ribozyme.

29. (Currently Amended) A nucleic acid molecule of at least 15 nucleotides in length hybridizing specifically with the regulatory sequence of claim 24 ~~or 25~~.

30. (Currently Amended) A vector comprising a regulatory sequence of claim 24 ~~or 25~~ or a recombinant DNA molecule of ~~any one of claims 26 to 28~~.

31. (Currently Amended) A cell transformed with a regulatory sequence of claim 24 ~~or 25 or a recombinant DNA molecule of any one of claims 26 to 28 or the vector of claim 30.~~

32. (Currently Amended) A method for the production of transgenic plants, plant cells or plant tissue comprising the introduction of a the recombinant DNA molecule of ~~any one of claims claim 26 to 28 or the vector of claim 30 into the genome of said plant, plant cell or plant tissue.~~

33. (Currently Amended) A transgenic plant cell which contains stably integrated into the genome a recombinant DNA molecule of ~~any one of claims~~ claim 26 to 28 ~~or a vector of claim 30 or obtainable according to the method of claim 32.~~

34. (Currently Amended) A transgenic plant or plant tissue comprising plant cells of claim 33 ~~or obtainable by the method of claim 32.~~

35. (Currently Amended) Harvestable parts or propagation material of a plant of claim 34 ~~comprising plant cells of claim 33.~~

36. (Currently Amended) A method for the identification of an activator or inhibitor of genes encoding cyclin-dependent kinase inhibitors comprising the steps of:

(a) providing a plant, plant cell, or plant tissue comprising a recombinant DNA

molecule comprising a readout system operatively linked to a regulatory sequence of claim 24 or 25;

(b) culturing said plant cell or tissue or maintaining said plant in the presence of a compound or a sample comprising a plurality of compounds under conditions which permit expression of said readout system;

(c) identifying or verifying a sample and compound, respectively, which leads to suppression or activation and/or enhancement of expression of said readout system in said plant, plant cell, or plant tissue.

37. (Original) A method for identifying and obtaining an activator or inhibitor of cyclin-dependent kinase inhibitors comprising the steps of:

(a) combining a compound to be screened with a reaction mixture containing the protein of claim 11 and a readout system capable of interacting with the protein under suitable conditions;

(b) maintaining said reaction mixture in the presence of the compound or a sample comprising a plurality of compounds under conditions which permit interaction of the protein with said readout system;

(c) identifying or verifying a sample and compound, respectively, which leads to suppression or activation of the readout system.

38. (Currently Amended) A method of producing a plant herbicide comprising the steps of the method of claim 36 ~~or 37~~ and formulating the compound obtained or identified in step (c) or a derivative thereof in a form suitable for the application in agriculture or plant cell and tissue culture.

39. (Currently Amended) A compound obtained or identified by the method of claim 36 ~~or 37~~, which is an activator or inhibitor of cyclin-dependent kinase inhibitors.

40. (Currently Amended) A diagnostic composition comprising a DNA ~~sequence~~ molecule of claim 1 ~~[[, 4 or 5]]~~ or 4, or a DNA molecule having the sequence set forth in SEQ ID NO:1, or comprising the nucleotide sequence from nucleotide position 305 to 932 of SEQ ID NO:1, or comprising a nucleotide sequence encoding a protein comprising the amino acid sequence as set forth in SEQ ID NO:2, or comprising a nucleotide sequence encoding a protein comprising the amino acid sequence from amino acid position 75 to 209 of SEQ ID NO:2 ~~a vector of claim 6 or 7, a protein of claim 11, an antibody of claim 12, the regulatory sequence of claim 24 or 25, the recombinant DNA molecule of any one of claims 26 to 28, the nucleic acid molecule of claim 29, the vector of claim 30, or the compound of claim 39, and optionally suitable means for detection.~~

41. (Canceled)

42. (Canceled)

Please add the following claims:

43. (New) A host cell comprising the vector of Claim 7.

- 44. (New) A host cell comprising the DNA molecule of Claim 1 or 4.
- 45. (New) A cell transformed with the vector of claim 30.
- 46. (New) A method for the production of transgenic plants, plant cells, a plant tissue, comprising the introduction of the vector of Claim 30 into the genome of said plant, plant cell or plant tissue.
- 47. (New) A vector comprising the recombinant DNA molecule of Claim 26.
- 48. (New) A vector comprising the recombinant DNA molecule of Claim 27.
- 49. (New) A vector comprising the recombinant DNA molecule of Claim 28.